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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,130	11/12/2003	Bradley W. Smith	AAI-14260	6218

45483 7590 10/20/2005

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EXAMINER	
SPISICH, GEORGE D	
ART UNIT	**PAPER NUMBER**
3616	

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/706,130	SMITH, BRADLEY W.	
	Examiner	Art Unit	
	George D. Spisich	3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perotto (USPN 5,970,880 provided in Applicant's IDS) in view of Dahl et al. (USPN 6,139,055 in further view of Nakashima et al. (USPN 6,598,901).

Perotto discloses an inflator device having a diffuser chamber (8), a first combustion chamber (10) a supply of a first gas generating pyrotechnic material (21) contained within the first combustion chamber and wherein at least a portion of the supply of first pyrotechnic material is reactable.

Perotto discloses a controlling orifice (6) formed by the first combustion chamber and providing independent fluidic communication between the first combustion chamber and the diffuser chamber, the controlling orifice "throttling" a single stage combustion wherein the supply of the first gas-generating pyrotechnic material is selectively reactable to produce a first combustion chamber single stage combustion product gas.

Perotto discloses a second combustion chamber (7) connected to the diffuser chamber, a supply of second gas-generating pyrotechnic material (20) contained within the second combustion chamber and wherein at least a portion of the supply of the second gas-generating pyrotechnic material is reactable, a controlling orifice (5) formed by the second combustion chamber and providing independent fluidic communication between the second combustion chamber and the diffuser chamber and the controlling orifice "throttling" a single stage combustion wherein the supply of the second gas-generating pyrotechnic material is selectively reactable to produce a second combustion chamber single stage combustion product gas.

Perotto discloses a plurality of diffuser orifices (9) formed in the diffuser chamber, the diffuser orifices "throttling" a dual stage combustion wherein the supply of the first gas-generating pyrotechnic material is reactable to produce a first combustion chamber dual stage combustion product gas and said supply of the second gas-generating pyrotechnic material is reactable to produce a second combustion chamber dual stage combustion product gas.

Perotto discloses a condenser element (29) which is a cooling medium contained within the diffuser chamber.

Perotto discloses first and second initiators in discharge communication with the first and second combustion chambers and in operational initiation with the supply of first and second gas generating pyrotechnic material.

However, Perotto does not disclose the particular characteristics of the pyrotechnic materials and inflator.

Dahl et al. teaches (col 12, lines 40-45) a time delay of 30 msec, and also that when both igniter assemblies are used in succession, then pressure increases more rapidly than when the one chamber is used alone. Given this, and the standard burn rate expression, it is determined that the burn rates of a material are effected by the actuation of plural chambers.

Nakashima et al. teaches (col. 5, lines 37-45), which well known in the art of inflators, that it is known to adjust the actuation performance of a gas generator. The adjustment of the two combustion chambers can be made by using gas generating agents that are different in burn rate, composition, composition ratio, amount of each other and furthermore, a dual chamber inflator having a first stage where one chamber fires alone if desired, and dual stages where the chambers fire in unison, or in succession either one before the other.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use materials having the characteristics as claimed in the dual stage inflator as disclosed by Perotto, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended used as a matter of obvious design choice. *In re Leshin,* 125 USPQ 416. Furthermore, Nakashima et al. has disclosed that it is known in the art to vary the materials as previously discussed to optimize the operating characteristics of the inflator.

Response to Arguments

Applicant's arguments filed July 26, 2005 have been fully considered but they are not persuasive.

With respect to Applicant's argument that the throttling effect is not shown in the combined references, Examiner disagrees and maintains the rejection. The references show the claimed structure of Applicant's invention, and it is well within reason that the teaching references of Nakashima and Dahl teach that it is well known in the airbag inflator art, to provide any known material, having particular burn rates, durations, single and dual stage inflation, etc. in an inflator to provide a desired operating characteristic. The structure of Perotto is identical to Applicant's claimed invention and it would be well within reason to state that the throttling effect as claimed would be present, especially when adapting the teachings of Nakashima.

With respect to Applicant's argument that the prior art does not show the use of pressure dependent material with a particular burn rate, Examiner disagrees and maintains the rejection. As stated above, the teaching of Nakashima and Dahl clearly disclose what is well known in the airbag inflator art, which is the ability of one of ordinary skill in the art to use any material, having any burn rate to provide the desired operating characteristic of the inflator. The fact that Applicant claims a particular burn rate and that the material has a burn rate that is pressure dependent is not a new concept and therefore is within the level of skill of one in the airbag art to decide to incorporate into the dual stage inflator of Perotto.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George D. Spisich whose telephone number is (571) 272-6676. The examiner can normally be reached on Monday-Friday 9:00 to 6:30 except alt. Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George D. Spisich
October 12, 2005

10/17/05

PAUL N. DICKSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600